CLAIMS:

1.     A method comprising:

selecting a first parameter configuration for a neurostimulator;

observing efficacy of the first parameter configuration; and

selecting a second parameter configuration for the neurostimulator based on the observed efficacy of the first parameter configuration and a Bayesian network structure relating additional parameter configurations according to probability of efficacy.

2.     The method of claim 1, wherein the parameter configurations include electrode configurations, each of the electrode configurations defining a combination of two or more electrodes for delivery of neurostimulation energy.

3.     The method of claim 2, wherein each of the electrode configurations defines polarities for electrodes in the combination.

4.     The method of claim 2, wherein the electrodes are associated with different target regions within a body of a patient.

5.     The method of claim 2, wherein the electrodes are carried by two or more implanted leads.

6.     The method of claim 5, wherein the implanted leads are implanted proximate a portion of a spine of a patient.

7.     The method of claim 2, wherein the Bayesian network structure defines a plurality of configuration nodes representing different electrode configurations, a plurality of target region nodes representing target regions within a body of a patient, and an efficacy probability relationship among the configuration nodes and the target regions.

8.      The method of claim 7, further comprising iteratively selecting additional electrode configurations for the neurostimulator based on observed efficacy of preceding electrode configurations and the Bayesian network structure.

9.      The method of claim 8, further comprising terminating the iterative selection of the additional electrode configurations when one or more termination criteria are satisfied.

10.     The method of claim 9, wherein the termination criteria include selection of one of the electrode configurations with an observed efficacy that satisfies a threshold efficacy.

11.     The method of claim 7, further comprising observing efficacy of the electrode configurations in each of the target regions, and representing the observed efficacy in the configuration nodes and the target region nodes of the Bayesian network structure.

12.     The method of claim 2, further comprising:

        iteratively selecting additional electrode configurations for the neurostimulator based on observed efficacy of preceding electrode configurations and the Bayesian network structure;

        terminating the iterative selection of the additional electrode configurations at a final electrode configuration when one or more termination criteria are satisfied; and

        programming the neurostimulator to employ the final electrode configuration in delivery of neurostimulation therapy.

13.     The method of claim 12, wherein the neurostimulator is a spinal cord stimulator, and the final electrode configuration includes electrodes deployed on one more implanted spinal leads.

14.     The method of claim 12, wherein the final electrode configuration defines a combination of two electrodes from a set of at least eight electrodes.

15.    The method of claim 2, further comprising:

iteratively selecting additional electrode configurations for the neurostimulator based on observed efficacies of preceding electrode configurations and the Bayesian network structure; and

modifying probability relationships represented by the Bayesian network structure based on the observed efficacies.

16.    The method of claim 1, wherein selecting the first and second parameter configurations includes suggesting the first and second parameter configurations to a clinician.

17.    The method of claim 1, wherein observing efficacy includes receiving user input indicating observed efficacy.

18.    A computer-readable medium comprising instructions to cause a processor to:

select a first parameter configuration for a neurostimulator;

observe efficacy of the first parameter configuration; and

select a second parameter configuration for the neurostimulator based on the observed efficacy of the first parameter configuration and a Bayesian network structure relating additional parameter configurations according to probability of efficacy.

19.    The computer-readable medium of claim 18, wherein the parameter configurations include electrode configurations, each of the electrode configurations defining a combination of two or more electrodes for delivery of neurostimulation energy.

20.    The computer-readable medium of claim 19, wherein each of the electrode configurations defines polarities for electrodes in the combination.

21.    The computer-readable medium of claim 19, wherein the electrodes are associated with different target regions within a body of a patient.

22.     The computer-readable medium of claim 19, wherein the electrodes are carried by two or more implanted leads.

23.     The computer-readable medium of claim 19, wherein the implanted leads are implanted proximate a portion of a spine of a patient.

24.     The computer-readable medium of claim 19, wherein the Bayesian network structure defines a plurality of configuration nodes representing different electrode configurations, a plurality of target region nodes representing target regions within a body of a patient, and an efficacy probability relationship among the configuration nodes and the target regions.

25.     The computer-readable medium of claim 24, wherein the instructions cause the processor to iteratively select additional electrode configurations for the neurostimulator based on observed efficacy of preceding electrode configurations and the Bayesian network structure.

26.     The computer-readable medium of claim 25, wherein the instructions cause the processor to terminate the iterative selection of the additional electrode configurations when one or more termination criteria are satisfied.

27.     The computer-readable medium of claim 26, wherein the termination criteria include selection of one of the electrode configurations with an observed efficacy that satisfies a threshold efficacy.

28.     The computer-readable medium of claim 24, wherein the instructions cause the processor to observe efficacy of the electrode configurations in each of the target regions, and represent the observed efficacy in the configuration nodes and the target region nodes of the Bayesian network structure.

29.     The computer-readable medium of claim 19, wherein the instructions cause the processor to:

iteratively select additional electrode configurations for the neurostimulator based on observed efficacy of preceding electrode configurations and the Bayesian network structure;

terminate the iterative selection of the additional electrode configurations at a final electrode configuration when one or more termination criteria are satisfied; and

program the neurostimulator to employ the final electrode configuration in delivery of neurostimulation therapy.

30. The computer-readable medium of claim 29, wherein the neurostimulator is a spinal cord stimulator, and the final electrode configuration includes electrodes deployed on one more implanted spinal leads.

31. The computer-readable medium of claim 30, wherein the final electrode configuration defines a combination of two electrodes from a set of at least eight electrodes.

32. The computer-readable medium of claim 19, wherein the instructions cause the processor to:

iteratively select additional electrode configurations for the neurostimulator based on observed efficacies of preceding electrode configurations and the Bayesian network structure; and

modify probability relationships represented by the Bayesian network structure based on the observed efficacies.

33. The computer-readable medium of claim 18, wherein the instructions cause the processor to select the first and second parameter configurations by suggesting the first and second parameter configurations to a clinician.

34. The computer-readable medium of claim 18, wherein the instructions cause the processor to observe efficacy includes by receiving user input indicating observed efficacy.

35.     A device comprising a processor programmed to:

      select a first parameter configuration for a neurostimulator;

      observe efficacy of the first parameter configuration; and

      select a second parameter configuration for the neurostimulator based on the observed efficacy of the first parameter configuration and a Bayesian network structure relating additional parameter configurations according to probability of efficacy.

36.     The device of claim 35, wherein the parameter configurations include electrode configurations, each of the electrode configurations defining a combination of two or more electrodes for delivery of neurostimulation energy.

37.     The device of claim 36, wherein each of the electrode configurations defines polarities for electrodes in the combination.

38.     The device of claim 36, wherein the electrodes are associated with different target regions within a body of a patient.

39.     The device of claim 36, wherein the electrodes are carried by two or more implanted leads.

40.     The device of claim 36, wherein the implanted leads are implanted proximate a portion of a spine of a patient.

41.     The device of claim 36, wherein the Bayesian network structure defines a plurality of configuration nodes representing different electrode configurations, a plurality of target region nodes representing target regions within a body of a patient, and an efficacy probability relationship among the configuration nodes and the target regions.

42.     The device of claim 41, wherein the processor iteratively selects additional electrode configurations for the neurostimulator based on observed efficacy of preceding electrode configurations and the Bayesian network structure.

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43.     The device of claim 42, wherein the processor terminates the iterative selection of the additional electrode configurations when one or more termination criteria are satisfied.

44.     The device of claim 43, wherein the termination criteria include selection of one of the electrode configurations with an observed efficacy that satisfies a threshold efficacy.

45.     The device of claim 41, wherein the processor observes efficacy of the electrode configurations in each of the target regions, and represents the observed efficacy in the configuration nodes and the target region nodes of the Bayesian network structure.

46.     The device of claim 36, wherein the processor:

iteratively selects additional electrode configurations for the neurostimulator based on observed efficacy of preceding electrode configurations and the Bayesian network structure;

terminates the iterative selection of the additional electrode configurations at a final electrode configuration when one or more termination criteria are satisfied; and

programs the neurostimulator to employ the final electrode configuration in delivery of neurostimulation therapy.

47.     The device of claim 46, wherein the neurostimulator is a spinal cord stimulator, and the final electrode configuration includes electrodes deployed on one more implanted spinal leads.

48.     The device of claim 47, wherein the final electrode configuration defines a combination of two electrodes from a set of at least eight electrodes.

49.     The device of claim 36, wherein the processor:

iteratively selects additional electrode configurations for the neurostimulator based on observed efficacies of preceding electrode configurations and the Bayesian network structure; and

modifies probability relationships represented by the Bayesian network structure based on the observed efficacies.

50.     The device of claim 35, wherein the processor selects the first and second parameter configurations by suggesting the first and second parameter configurations to a clinician.

51.     The device of claim 35, wherein the processor observes efficacy by receiving user input indicating observed efficacy.